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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/631,242	08/02/2000	Hoon Chang	678-520(P9487)	8089

7590 01/12/2005
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EXAMINER

WILSON, ROBERT W

ART UNIT PAPER NUMBER

2661

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/631,242

Applicant(s)

CHANG, HOON

Examiner

Robert W Wilson

Art Unit

2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 August 2000 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/6/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 2661

DETAILED ACTION

1.0 The application of Hoon Chang for an "APPARATUS AND METHOD FOR RETRANSMITTING DATA ACCORDING TO RADIO LINK PROTOCOL IN MOBILE COMMUNICATION" filed 8/2/2000 requesting Foreign Priority based upon Korea 1999-31753 dated 8/2/1999 and amended 11/26/04 has been examined. Based upon a revised search new prior art was found.

Claim Rejections - 35 USC § 103

2.0 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 & 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raythonyi et. al.

(U.S. Patent No.: 6,772,215 based upon a provisional application filing date of 4/9/99) in view of Stallings

Referring to claim 1, Raythonyi teaches: A method of requesting frame retransmission in a mobile communication system (Utilizing ARQ protocol which are Radio Link protocols utilized in the GSM or mobile communication system per col. 1 line 20-col. 2 line 21 or method)

Storing a sequence number of a plurality of RLP (Radio Link Protocol frames that are not received from a transmitter in a receiver (The reference teaches that RLP utilizing ARQ which can be stop-and-wait ARQ, go-back-n ARQ, or Selective Repeat ARQ is utilized between two peers or a transmitter and receiver per col. 1 line 20-col. 2 line 21)

Transmitting a retransmission request frame including fields that indicate the sequence numbers stored in the receiver (The reference teaches that RLP utilizing ARQ which can be stop-and-wait ARQ, go-back-n ARQ, or Selective Repeat ARQ are sent between two peers or a transmitter and receiver per col. 1 line 20-col. 2 line 21)

Art Unit: 2661

Sequentially receiving the requested RLP frames in the order of the sequence numbers from the transmitter in the receiver (The reference teaches that RLP utilizing ARQ which can be stop-and-wait ARQ, go-back-n ARQ, or Selective Repeat ARQ is utilized between two peers or a transmitter and receiver per col. 1 line 20-col. 2 line 21)

Comparing the stored sequence numbers with the sequence numbers of received RLP frames when if the receiver fails to receive one of the requested RLP frames (The reference teaches that RLP utilizing ARQ which can be stop-and-wait ARQ, go-back-n ARQ, or Selective Repeat ARQ is utilized between two peers or a transmitter and receiver per col. 1 line 20-col. 2 line 21)

Requesting retransmission of the lost RLP frame upon receipt of an RLP frame of a higher sequence number than the sequence number of the lost RLP frame (The reference teaches that RLP utilizing ARQ which can be stop-and-wait ARQ, go-back-n ARQ, or Selective Repeat ARQ is utilized between two peers or a transmitter and receiver per col. 1 line 20-col. 2 line 21)

Raythonyi does not expressly call for: Storing a sequence number of a plurality of RLP (Radio Link Protocol frames that are not received from a transmitter in a receiver;

Transmitting a retransmission request frame including fields that indicate the sequence number in the receiver; Sequentially receiving the requested RLP frames in the order of the sequence numbers from the transmitter in the receiver; Comparing the stored sequence numbers with the sequence numbers of received RLP frames when if the receiver fails to receive one of the requested RLP frames;

Requesting retransmission of the lost RLP frame upon receipt of an RLP frame of a higher sequence number than the sequence number of the lost RLP frame but teaches that RLP utilizing ARQ which can be stop-and-wait ARQ, go-back-n ARQ, or Selective Repeat ARQ are sent between two peers or a transmitter and receiver per col. 1 line 20-col. 2 line 21.

Stallings teaches: Storing a sequence number of a plurality of RLP (Radio Link Protocol frames that are not received from a transmitter in a receiver (Stallings teaches Stop and wait ARQ, go-back N ARQ, and Selective repeat ARQ per Pgs 141-144. In each of these ARQ protocols the receiver stores the frame sequence in error or not received by the receiver)

Transmitting a retransmission request frame including fields that indicate the sequence numbers stored in the receiver (Stallings teaches Stop and wait ARQ, go-back N ARQ, and Selective repeat ARQ per Pgs 141-144. In each of these ARQ protocols the receiver sends the sequence number of the frame not received back to the transmitter)

Sequentially receiving the requested RLP frames in the order of the sequence numbers from the transmitter in the receiver (Stallings teaches Stop and wait ARQ, go-back N ARQ, and Selective repeat ARQ per Pgs 141-144. In each of these ARQ protocols the receiver receives sequence numbers in order from the receiver.)

Comparing the stored sequence numbers with the sequence numbers of received RLP frames when if the receiver fails to receive one of the requested RLP frames (Stallings teaches Stop and

Art Unit: 2661

wait ARQ, go-back N ARQ, and Selective repeat ARQ per Pgs 141-144. In each of these ARQ protocols the receiver compares the sequence number of the received with the requested sequence number)

Requesting retransmission of the lost RLP frame upon receipt of an RLP frame of a higher sequence number than the sequence number of the lost RLP frame (Stallings teaches Stop and wait ARQ, go-back N ARQ, and Selective repeat ARQ per Pgs 141-144. In each of these ARQ protocols the receiver requests retransmission of the lost RLP frame upon receipt of a higher frame)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the processing associated with Stop and wait ARQ, go-back N ARQ, and Selective repeat ARQ of Stallings to the RLP processing of Rathonyi because Rathonyi states that ARQ protocols are utilized in RLP processing.

Referring to claim 2, Raythonyi teaches: A mobile communication system (Utilizing ARQ protocol which are Radio Link protocols utilized in the GSM or mobile communication system per col. 1 line 20-col. 2 line 21)

A transmitter for transmitting a plurality of RLP (Radio Link Protocol frames each having a sequence number (The reference teaches that RLP utilizing ARQ which can be stop-and-wait ARQ, go-back-n ARQ, or Selective Repeat ARQ is utilized between two peers or a transmitter to a receiver per col. 1 line 20-col. 2 line 21)

A receiver for receiving the plurality of RLP frames (The reference teaches that RLP utilizing ARQ which can be stop-and-wait ARQ, go-back-n ARQ, or Selective Repeat ARQ is utilized between two peers or a transmitter and receiver per col. 1 line 20-col. 2 line 21)

Wherein the receiver retransmits a transmission request including fields that indicate the sequence numbers of non-received RLP frames (The reference teaches that RLP utilizing ARQ which can be stop-and-wait ARQ, go-back-n ARQ, or Selective Repeat ARQ is utilized between two peers or a transmitter and receiver per col. 1 line 20-col. 2 line 21)

The transmitter sequentially transmits the requested RLP frames along with the sequence numbers of the requested FLP frames in order of the sequence numbers to the receiver upon receipt of the retransmission request frame (The reference teaches that RLP utilizing ARQ which can be stop-and-wait ARQ, go-back-n ARQ, or Selective Repeat ARQ is utilized between two peers or a transmitter and receiver per col. 1 line 20-col. 2 line 21)

The receiver RLP transmits a retransmission request frame for the RLP frame the receiver failed to receive upon receipt of an RLP frame of a higher sequence number than the sequence number of the lost RLP frame (The reference teaches that RLP utilizing ARQ which can be stop-and-

Art Unit: 2661

wait ARQ, go-back-n ARQ, or Selective Repeat ARQ is utilized between two peers or a transmitter and receiver per col. 1 line 20-col. 2 line 21)

Raythonyi does not expressly call for: A transmitter for transmitting a plurality of RLP (Radio Link Protocol frames each having a sequence number; A receiver for receiving the plurality of RLP frames; Wherein the receiver retransmits a transmission request including fields that indicate the sequence numbers of non-received RLP frames; The transmitter sequentially transmits the requested RLP frames along with the sequence numbers of the requested RLP frames in order of the sequence numbers to the receiver upon receipt of the retransmission request frame; The receiver RLP transmits a retransmission request frame for the RLP frame the receiver failed to receive upon receipt of an RLP frame of a higher sequence number than the sequence number of the lost RLP frame but teaches that RLP utilizing ARQ which can be stop-and-wait ARQ, go-back-n ARQ, or Selective Repeat ARQ are sent between

Stallings teaches: A transmitter for transmitting a plurality of RLP (Radio Link Protocol frames each having a sequence number (Stallings teaches Stop and wait ARQ, go-back N ARQ, and Selective repeat ARQ per Pgs 141-144. In each of these ARQ protocols the transmitter sends a plurality of sequence numbered frames.)

A receiver for receiving the plurality of RLP frames (Stallings teaches Stop and wait ARQ, go-back N ARQ, and Selective repeat ARQ per Pgs 141-144. In each of these ARQ protocols the receiver receives a plurality of frames)

Wherein the receiver retransmits a transmission request including fields that indicate the sequence numbers of non-received RLP frames (Stallings teaches Stop and wait ARQ, go-back N ARQ, and Selective repeat ARQ per Pgs 141-144. In each of these ARQ protocols the receiver retransmits a transmission request including fields that indicate the sequence numbers of non-received RLP frames)

The transmitter sequentially transmits the requested RLP frames along with the sequence numbers of the requested RLP frames in order of the sequence numbers to the receiver upon receipt of the retransmission request frame (Stallings teaches Stop and wait ARQ, go-back N ARQ, and Selective repeat ARQ per Pgs 141-144. In each of these ARQ protocols the transmitter sequentially transmits frames to the receiver upon receipt of a retransmission request)

The receiver RLP transmits a retransmission request frame for the RLP frame the receiver failed to receive upon receipt of an RLP frame of a higher sequence number than the sequence number of the lost RLP frame (Stallings teaches Stop and wait ARQ, go-back N ARQ, and Selective repeat ARQ per Pgs 141-144. In each of these ARQ protocols the receiver transmits a request frame for each frame not received upon receipt of a frame of a higher sequence number)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the processing associated with Stop and wait ARQ, go-back N ARQ, and Selective repeat ARQ

Art Unit: 2661

of Stallings to the RLP processing of Rathonyi because Rathonyi states that ARQ protocols are utilized in RLP processing.

Claim Rejections - 35 USC § 103

3.0 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Raythonyi et. al. (U.S.

Patent No.: 6,772,215 based upon a provisional application filing date of 4/9/99) in view of

Stallings further in view of Seo (U.s. Patent No.; 6,581,176)

Referring to claim 3, Raythonyi teaches: A mobile communication system (Utilizing ARQ protocol which are Radio Link protocols utilized in the GSM or mobile communication system per col. 1 line 20-col. 2 line 21)

A transmitter for transmitting a plurality of RLP (Radio Link Protocol frames each having a sequence number (The reference teaches that RLP utilizing ARQ which can be stop-and-wait ARQ, go-back-n ARQ, or Selective Repeat ARQ is utilized between two peers or a transmitter to a receiver per col. 1 line 20-col. 2 line 21)

And sequentially transmitting to the receiver requested RLP frames along with sequence numbers of a requested RLP frames in the order of the sequence numbers upon receipt of a retransmission request frame (The reference teaches that RLP utilizing ARQ which can be stop-and-wait ARQ, go-back-n ARQ, or Selective Repeat ARQ is utilized between two peers or a transmitter and receiver per col. 1 line 20-col. 2 line 21)

A receiver for receiving the plurality of RLP frames (The reference teaches that RLP utilizing ARQ which can be stop-and-wait ARQ, go-back-n ARQ, or Selective Repeat ARQ is utilized between two peers or a transmitter and receiver per col. 1 line 20-col. 2 line 21)

Transmitting a first retransmission request frame including fields that indicated the sequence number of non-received RLP frames (The reference teaches that RLP utilizing ARQ which can be stop-and-wait ARQ, go-back-n ARQ, or Selective Repeat ARQ is utilized between two peers or a transmitter and receiver per col. 1 line 20-col. 2 line 21)

Art Unit: 2661

And transmitting a second retransmission request frame if the receiver fails to receive on of the requested RLP frames (The reference teaches that RLP utilizing ARQ which can be stop-and-wait ARQ, go-back-n ARQ, or Selective Repeat ARQ is utilized between two peers or a transmitter and receiver per col. 1 line 20-col. 2 line 2)

Stallings teaches:

A transmitter for transmitting a plurality of RLP (Radio Link Protocol frames each having a sequence number (Stallings teaches Stop and wait ARQ, go-back N ARQ, and Selective repeat ARQ per Pgs 141-144. In each of these ARQ protocols the transmitter sends a plurality of sequence numbered frames.)

And sequentially transmitting to the receiver requested RLP frames along with sequence numbers of a requested RLP frames in the order of the sequence numbers upon receipt of a retransmission request frame (Stallings teaches Stop and wait ARQ, go-back N ARQ, and Selective repeat ARQ per Pgs 141-144. In each of these ARQ protocols the transmitter sequentially transmits fames to the receiver upon receipt of a retransmission request)

A receiver for receiving the plurality of RLP frames (Stallings teaches Stop and wait ARQ, go-back N ARQ, and Selective repeat ARQ per Pgs 141-144. In each of these ARQ protocols the receiver receives a plurality of frames)

Transmitting a first retransmission request frame including fields that indicated the sequence number of non-received RLP frames (Stallings teaches Stop and wait ARQ, go-back N ARQ, and Selective repeat ARQ per Pgs 141-144. In each of these ARQ protocols the receiver sends a retransmission request indicating the non-received RLP frame)

And transmitting a second retransmission request frame if the receiver fails to receive on of the requested RLP frames (Stallings teaches Stop and wait ARQ, go-back N ARQ, and Selective repeat ARQ per Pgs 141-144.)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the processing associated with Stop and wait ARQ, go-back N ARQ, and Selective repeat ARQ of Stallings to the RLP processing of Rathonyi because Rathonyi states that ARQ protocols are utilized in RLP processing.

The combination of Rathonyi and Stallings do not expressly call for: And transmitting a second retransmission request frame if the receiver fails to receive on of the requested RLP frames but teach ARQ protocol.

Seo teaches: And transmitting a second retransmission request frame if the receiver fails to receive on of the requested RLP frames (The transmitter will retransmit request each time there

Art Unit: 2661

is a failure and the receiver will in turn send a missing sequence number frame equal to the total number of retransmit requests.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the retransmission of Seo to the ARQ system of the combination of Rathonyi and Stallings in order to insure that missing data is resent to insure system reliability.

Conclusion

7.0 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hetherington et. al. (U.S. Patent No.: 6,169,732 B1) dated 1/2/2001 which teaches RLP protocol.

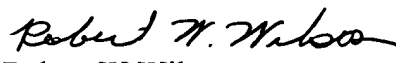
Wu et. al. (U.S. Patent No.; 6,494,481 B1) which also teaches RLP and ARQ.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert W Wilson whose telephone number is 571/272-3075. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on 571/272-3078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


KENNETH VANDERPUYE
PRIMARY EXAMINER


Robert W Wilson

Application/Control Number: 09/631,242

Page 9

Art Unit: 2661

Examiner

Art Unit 2661

RWW

January 7, 2005